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## ABSTRACT

Naturally Occurring Radioactive Materials (NORM) is a common and costly contaminant of produced waters associated with natural gas production and exploration. One way of combatting this problem is by identifying the problem beforehand. Our approach to this problem involves development of NORM prediction capabilities based on the geological environment.

During quarter twenty three of this project, work has continued in accordance with the project scope of work. We are still currently analyzing our produced water samples with emnphasis on metals analysis . In addition, the QA/QC plans continue to be implemented.

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## EXECUTIVE SUMMARY:

The Southern University Center for Energy and Environmental Studies is currently studying relationships which may exist between geological and radiological factors (NORM) in produced water samples. The goal also involves the observation of selected water parameters and determine their relationship to the aforementioned factors as well.

## PROJECT INTRODUCTION:

This project is to consist of three major tasks: (1) Radiological Analysis, (2) Correlative Results with Respect to NORM Activity, geological parameters and metals content, and (3) Technology Transfer.

The radiological results have been done by a subcontractor with the chemical analysis of samples and the geological component to be generated in-house or by another (as of yet undetermined source).

## RESULTS AND DISCUSSION:

During this reporting period, efforts were again geared towards analyzing the produced water samples, with emphasis on the metals analysis. The appropriate methods, etc., are in place and are currently being employed.

## CONCLUSION:

We still continue to follow our QA/QC plans. We have obtained some results and have preliminarily reached some conclusions from these results. In addition we are about to hopefully begin the in-house geological aspects of the project.